

Data Evaluation Report on the bioconcentration of imazapyr (AC 243997) in eastern oyster and grass shrimp

PMRA Submission Number {.....}

EPA MRID Number 45119709

Data Requirement: PMRA Data Code:
EPA DP Barcode: D275562
OECD Data Point:
EPA Guideline: 165-5

Test material:

Common name: Imazapyr.

Chemical name

IUPAC: 2-(4-Isopropyl-4-methyl-5-oxo-2-imidazolin-2-yl)nicotinic acid.

CAS name: 2-[4,5-Dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1*H*-imidazol-2-yl]-3-pyridinecarboxylic acid.

CAS No: 81334-34-1.

Synonyms: 2-(4-Methyl-4-(1-methylethyl)-5-oxo-2-imidazolin-2-yl)nicotinic acid.
AC 243997.

Arsenal, Chopper, Contain, Stalker.

SMILES string:

Reviewed and Approved by: Alex Clem
EPA

Signature:

Date:

Alex Clem
28 August 2003

Company Code: [for PMRA]

Active Code: [for PMRA]

Use Site Category: [for PMRA]

EPA PC Code: 128821

CITATION: Drottar, K. R.; Swigert, J. P.; and Wisk, J. D. 1996. **Uptake, Depuration, Bioconcentration, and Metabolism of Carbon-14 AC 243997 in Eastern Oyster and Grass Shrimp.** Unpublished study performed and submitted by American Cyanamid Company, Princeton, NJ. Laboratory Project ID: 954-93-165, ECO 93-165.01, 954-93-164. Report completion date September 12, 1996.



Because of their major interest in animal metabolites, the Health Effects Division (HED), with the primary assistance of their contractor, performed the formal review of this study. The full Data Evaluation Record resides in HED files. EFED presents here only brief administrative and scientific conclusions.

ADMINISTRATIVE CONCLUSIONS

This bioconcentration study (MRID 45119709) provides **supplemental** data in **partial fulfillment** of the EFED data requirement for the bioconcentration (§165-5) of imazapyr (designated throughout the submission as AC 243,997) in non-target aquatic organisms. For EFED purposes, in spite of study deficiencies, taking into consideration all the submitted environmental fate studies and assuming that reasonable default assumptions will be used for estimating environmental exposure and risk, there would be little value added to satisfactory performance of more definitive studies. Therefore, *EFED is not requiring additional bioconcentration studies at this time*. However, because of the high limit of quantitation for metabolites, HED may require additional data.

SCIENTIFIC CONCLUSIONS

Under test conditions, overall results for the two test species, oyster and shrimp, are essentially the same: There was no bioconcentration of ^{14}C -AC 243997 (pyridyl-6- ^{14}C -imazapyr) [bioconcentration factor (BCF) < 1]. The study was deficient for both oyster and shrimp because of relatively high levels of quantitation (LOQ) compared to exposure concentrations. Consequently, because of the relatively low and variable concentrations of residues compared to the LOQ, uptake and depuration rates of imazapyr could not be calculated meaningfully, and no metabolite identification work was conducted.

Eastern Oyster (*Crassostrea virginica*):

- * Relatively high level of quantitation (LOQ) in tissue: 0.072 mg/Kg (ppm) (or 72 parts per billion, ppb)
- * 28-day exposure (uptake) period at a mean measured imazapyr concentration in water of 0.25 mg/L (ppm) (or 250 ppb)
- * 14-day depuration period

Results: BCF was less than one (1). Due to the relatively low (compared to LOQ) and variable concentrations of ^{14}C -AC 243997 (pyridyl-6- ^{14}C -imazapyr), uptake and depuration rates were not calculable meaningfully and no metabolite identification work was conducted. No quantifiable radioactivity in tissue (relatively high LOQ of 72 ppb) was detected during the entire depuration period.

Grass Shrimp (*Palaemonetes pugio*):

- * Relatively high level of quantitation (LOQ) in tissue: 0.128 mg/Kg (ppm) (or 128 ppb)
- * 28-day exposure (uptake) period at a mean measured imazapyr concentration of 0.26 mg/L (ppm) (or 260 ppb)
- * 14-day depuration period

Results: BCF was less than one (1). Due to the low (relative to LOQ) and variable concentrations of ^{14}C -AC 243997 (pyridyl-6- ^{14}C -imazapyr), uptake and depuration rates were not calculable meaningfully and no metabolite identification work was conducted. No quantifiable radioactivity in tissue (relatively high LOQ of 128 ppb) was detected for the last two sampling intervals during depuration.